REMARKS/ARGUMENTS

Claims 1 and 3-37 are pending in the application. Claims 13, 20, 24 and 25 are currently amended.

Claim 2 was previously cancelled.

Claim 38 is newly presented.

In the Specification:

The Examiner objected to the Abstract of the Invention as being too short. The Abstract is amended herein to comply with the range of 50 to 150 words. No new matter is added. The subject matter added to expand the Abstract previously existed in the text of one or more of the claims.

Claim Rejections Under 35 USC § 103:

Claims 1 and 3-37 were under 35 USC § 103(a) over US Patent 5,974,360 to Otsuka et al. in view of US Patent 5,615,118 to Frank and further in view of US Patent 5,077,558 to Kuntman.

Claim 1 includes the limitation of generating a warning as a function of said forecast information describing a weather condition and said phase of flight.

The invention as presently recited in claim 1 is patentable over Otsuka, et al., Frank and Kuntman, both individually and in combination.

The Examiner admits, and the Applicant agrees, that neither Otsuka, et al. nor Frank disclose or suggest either (1) retrieving a phase of flight of the aircraft, or (2) generating a warning as a function of forecast information describing a weather condition and the phase of flight, as recited in claim 1. Rather, the Examiner relies upon Kuntman for these further limitations.

Kuntman is an improper reference. The Kuntman reference is assigned to the Assignee of the instant application, and was so assigned at the time the instant invention was made. It is known that for an application filed after November 29, 1999, a showing that the prior art and the claimed invention were, at the time the invention was made, owned by the same person is sufficient to overcome the rejection.

The instant Continuation-in-part application was filed after November 29, 1999, and the parent application Serial No. 09/676,457 of which the instant application is a Continuation-in-part was also filed after November 29, 1999.

In the Preliminary Amendment filed with the instant Continuation-in-part application, the Applicant made such a showing that the prior art and the claimed invention were, at the time the invention was made, owned by the same person. The showing is repeated here, where the Applicant declares that the prior art reference US Patent 5,077,558 to Kuntman is assigned to the Assignee of the present invention. The assignment of US Patent 5,077,558 to Kuntman is recorded at Reel/Frame 005547/0493 and a copy is enclosed herewith. The Assignee of the Kuntman reference is shown as Allied-Signal Inc. of Morris Township, Morris County, NJ, which is the same Assignee as the instant application, as indicated by the assignment recorded at Reel 011175, Frame 0637. See, also, a copy of the assignment enclosed herewith. Allied-Signal Inc. acquired Honeywell International, Inc. and subsequently changed its name to the latter so that Allied-Signal Inc. and Honeywell International, Inc. are now one and the same entity.

For at least the above reason, Kuntman is an improper reference and should not be relied upon by the Examiner.

Furthermore, even if Kuntman was a proper reference, which it is not, Kuntman fails to provide the deficiencies of the Otsuka, et al. and Frank references. As discussed above, the Examiner admits, and the Applicant agrees, that Otsuka, et al. and Frank fail to disclose or suggest either (1) accessing a phase of flight of the aircraft, or (2) generating a warning as a function of forecast weather condition information and the phase of flight, as recited in claim 1. Rather, the Examiner relies upon Kuntman for these further limitations.

Kuntman teaches an airborne wind shear detection radar incorporated into an existing weather radar with turbulence detection capability. Column 2, lines 7-12.

Kuntman teaches that wind shear "can cause considerable loss of altitude at critical phases of flight." Column 2, lines 5-6. Kuntman also teaches that "wind shear detection can be incorporated as a mode of operation of the weather radar and therefore could be activated during the landing and takeoff phases of flight. Column 2, lines 12-15. The above quotations are set forth in Kuntman as follows:

> Figure. 1 illustrates wind characteristics of a wind shear condition associated with a microburst 10, wherein a down draft exists near the center 12 of the microburst 10 and the wind horizontally spreads out near a forward edge 14 and a trailing edge 16 of the microburst 10. As a result, an aircraft 18 which traverses the

> microburst 10 along a path 20 will experience an increased head wind when it first contacts the microburst 10 at the forward edge 14. As the aircraft 18 nears the center 12 of the microburst 10 it experiences a strong down draft and a shift from head wind to tail wind. As the aircraft 18 nears the trailing edge 16 of the microburst 10, it experiences an increased tail wind. This change from head wind to tail wind with a strong down draft is the characteristics of wind shear. It can cause considerable loss of altitude at critical phases of flight.
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> Figure. 2 illustrates a block diagram of a wind shear detection weather radar in accordance with a preferred embodiment of the present invention wherein wind shear detection capabilities are incorporated into an existing weather radar with turbulence detection capability. Wind shear detection can be incorporated as a mode of operation of the weather radar and therefore could be activated during the landing and takeoff phases of flight. During the cruise, climb and approach phases of flight the radar could be operated in any of its normal modes currently available.
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> Column 1, line 59-column 2, line 18 (emphasis added).

The Examiner relies on the above portion of Kuntman's teachings to suggest that it would have been obvious to incorporate the teachings of the Otsuka, et al. and Frank references to make obvious the invention of claim 1. However, the Examiner is mistaken in interpreting the teachings of Kuntman. The Examiner interprets Kuntman to teach an "ability to generate alerts for wind shear detection as they relate to critical phases of flight with respect to the position of an aircraft along a flight path." The Examiner then makes the leap that it would be obvious to combine the ability to generate alerts for wind shear detection as they relate to critical phases of flight with respect to the position of an aircraft along a flight path to the teachings of Otsuka, et al. and Frank to make the present invention, since "taking phases of flight into consideration with respect to the position of an aircraft and to the position of turbulence along a flight path, allows a pilot the flexibility to take greater caution during a higher probability of threat to safety, while eliminating the need to change a course when a threat to safety is at a minimum."

Point 1: The Examiner is not correct in believing that Kuntman teaches an "ability to generate alerts for wind shear detection as they relate to critical phases of flight." Rather, by reference to Kuntman at column 1, line 59-column 2, line 18 (reproduced above), it is readily obvious

that Kuntman only teaches that "wind shear detection can be incorporated as a mode of operation of the weather radar and therefore could be **activated** during the landing and takeoff phases of flight." However, Kuntman goes on to teach that "during the cruise, climb and approach phases of flight the radar could be operated in any of its normal modes currently available." Thus, Kuntman teaches only that wind shear detection can be turned **on** during critical phases of flight, and turned **off** during other phases of flight.

An ability to "activate" a wind shear detection device during critical phases of flight, even coupled with an ability to deactivate the detection device during non-critical phases of flight, cannot possibly disclose or suggest generating a warning as a function of forecast information describing a weather condition and the phase of flight, as recited in claim 1. Rather, Kuntman teaches only wind shear detection that operates when it is activated, and does not operate when it is not activated. Thus, Kuntman teaches only generating a wind shear warning as a function of whether the wind shear detection is activated or not activated. Kuntman does not disclose or suggest generating a wind shear warning as a function of phase of flight of the aircraft, as recited in claim 1.

In summary of this point, Kuntman's teaching that a wind shear detection device "could be activated" during critical phases of flight and de-activated during other phases of flight cannot possibly disclose or suggest generating a warning as a function of the phase of flight, as recited in claim 1.

Point 2: The Examiner apparently contends that Kuntman's teaching of wind shear detection that is activated during critical phases of flight makes obvious generating a warning as a function of phase of flight, as recited in claim 1. The Examiner is not correct in making this gigantic leap of invention. The Examiner is not correct in contending that Kuntman's teaching of activating wind shear detection as a "mode of operation of the weather radar" and thereafter generating wind shear warnings could or would make obvious generating a warning as a function of the phase of flight, as recited in claim 1.

Rather, teaching activating a mode of operation of the weather radar cannot ever disclose or suggest generating a warning as a function of the phase of flight, as recited in claim 1. Nothing in the teachings of Kuntman make obvious the gigantic leap from activating a mode of operation to generating a warning as a function of an entirely unrelated parameter.

Thus, the Examiner must be using impermissible hindsight based on the instant invention to find that generating a warning as a function of the phase of flight, as recited in claim 1, is made obvious by Kuntman's teaching of merely activating a mode of operation of the weather radar.

Point 3: The Examiner is not correct in believing that Kuntman teaches an "ability to generate alerts for wind shear detection as they relate to critical phases of flight with respect to the position of an aircraft along a flight path." Rather, by reference to the above reproduced portion of Kuntman, it is readily obvious that Kuntman only teaches that "an aircraft 18 which traverses the microburst 10 along a path 20 will experience an increased head wind when it first contacts the microburst 10 at the forward edge 14." Thus, Kuntman teaches that an aircraft 18 traveling along a flight path 20 that intersects a microburst 10 will experience the effects of the microburst. Merely experiencing the effects of weather along a flight path does not disclose or suggest any "ability to generate alerts for wind shear detection as they relate to critical phases of flight with respect to the **position** of an aircraft along a flight path," as suggested by the Examiner. Therefore, Kuntman fails to disclose or suggest determining a coincidence of the aircraft and a weather condition by retrieving a flight path of the aircraft and comparing the flight path with a location of the weather condition, as recited in claim 5.

In summary of this point, Kuntman's teaching that an aircraft traveling on a flight path that intersects a microburst will experience the microburst cannot disclose or suggest the method of the invention for predicting the future state of a weather condition relative to an aircraft that includes (1) retrieving a flight path of the aircraft, and (2) comparing the flight path with a location of the weather condition, as recited in claim 6.

For at least each of the above reasons, claim 1 is believed to be allowable as originally presented in the instant Continuation-in-part application.

Claims 3-12 are allowable at least as depending from allowable claim 1.

Claim 6 is believed to be allowable independently of allowable base claim 1 as reciting both (1) retrieving an intended phase of flight at said coincidence of the aircraft and said weather condition; and (2) generating a warning as a function of said forecast information describing a weather condition and said intended phase of flight at said coincidence.

As discussed herein above, Kuntman fails to disclose or suggest generating a wind shear warning as a function of phase of flight of the aircraft. Furthermore, the Examiner has failed to point out any teaching or suggestion by Kuntman that an intended phase of flight be used in deciding whether to activate the wind shear detection mode of the weather radar. Rather, Kuntman teaches only that wind shear detection "could be activated during the landing and takeoff phases of flight" and "during the cruise, climb and approach phases of flight the radar could be operated in any of its normal modes." Activating or de-activating wind shear detection "during" a phase of flight is not activating or de-activating as a function of a future or "intended" phase of flight, as recited in claim 6.

Therefore, by teaching activating or de-activating wind shear detection "during," i.e. in the present, Kuntman fails to disclose or suggest any activity as a function of an "intended," i.e. future, or phase of flight, as recited in claim 6.

For at least the above reasons, claim 6 is allowable independently of allowable base claim 1 and intervening claims 4 and 5.

Claim 7 is believed to be allowable independently of allowable base claim 1 as reciting both (1) generating a warning as a function of determining an intensity of the weather condition at the coincidence; and (2) comparing the intensity of the weather condition with the intended phase of flight at the coincidence.

As discussed herein above, Kuntman fails to disclose or suggest generating a wind shear warning as a function of phase of flight of the aircraft. Furthermore, the Examiner has failed to point out any teaching or suggestion by Kuntman that an intended phase of flight be used in deciding whether to activate the wind shear detection mode of the weather radar. Obviously, because Kuntman fails to disclose or suggest either (1) generating a wind shear warning as a function of phase of flight, or (2) that an intended phase of flight be used in deciding whether to activate the wind shear detection, Kuntman cannot possibly disclose or suggest comparing an intensity of the weather condition with the intended phase of flight at a later time, i.e., at coincidence with the weather condition, as recited in claim 7.

For at least the above reasons, claim 7 is allowable independently of allowable base claim 1 and intervening claims 4, 5 and 6.

Amended claim 13 differs in scope from allowable claims 1, 6 and 7. However, the above arguments directed to claims 1, 6 and 7 are sufficiently applicable to claim 13 as to make repetition unnecessary. Thus, for at least the reasons above, claim 13 is believed to be allowable.

Claims 14-19 are allowable at least as depending from allowable claim 13.

Amended claim 20 differs in scope from allowable claims 1 and 6. However, the above arguments directed to claims 1 and 6 are sufficiently applicable to claim 20 as to make repetition unnecessary. Thus, for at least the reasons above, claim 20 is believed to be allowable.

Claim 21 is allowable at least as depending from allowable claim 20.

Claim 22 differs in scope from allowable claim 1. However, the above arguments directed to claim 1 are sufficiently applicable to claim 22 as to make repetition unnecessary. Thus, for at least the reasons above, claim 22 is believed to be allowable.

Claims 23-28 are allowable at least as depending from allowable claim 22.

Claim 24 is believed to be allowable independently of allowable base claim 22 as reciting: (1) the processor being further coupled to receive from a flight management computer a signal representative of the aircraft's intended flight path; (2) comparing the forecast track of the weather condition with the intended flight path; and (3) predicting a coincidence of the intended flight path and the weather condition.

Claim 24 differs in scope from allowable claims 1 and 6. However, the above arguments directed to claims 1 and 6 are sufficiently applicable to claim 24 as to make repetition unnecessary. Thus, for at least the reasons above, claim 24 is believed to be allowable independently of allowable base claim 22.

Claim 26 is believed to be allowable independently of allowable base claim 22 as reciting generating a warning signal as a function of coincidence with the weather condition, the phase of flight, and the state of said weather condition at or about coincidence with the weather condition. Claim 26 thus recites comparing a "state," i.e., intensity, of the weather condition with the phase of flight, similarly to allowable claim 7. Thus, although claim 26 differs in scope from allowable claim 7, the above arguments directed to claim 7 are sufficiently applicable to claim 26 as to make repetition unnecessary. Thus, for at least the reasons above, claim 26 is believed to be allowable independently of allowable base claim 22.

Claim 27 is believed to be allowable independently of allowable base claim 22 and intervening claims 25 and 26 as reciting (1) the processor being further coupled to receive a signal representative of the aircraft's intended phase of flight at or about coincidence with the weather condition; and (2) generating a warning signal is as a function of the intended phase of flight. Claim 27 thus recites generating a warning as a function of an "intended," i.e. future, or phase of flight, similarly to allowable claim 6. Thus, although claim 27 differs in scope from allowable claim 6, the above arguments directed to claim 6 are sufficiently applicable to claim 27 as to make repetition unnecessary. Thus, for at least the reasons above, claim 27 is believed to be allowable independently of allowable base claim 22.

Claim 29 differs in scope from allowable claim 1. However, the above arguments directed to claim 1 are sufficiently applicable to claim 29 as to make repetition unnecessary. Thus, for at least the reasons above, claim 29 is believed to be allowable.

Claims 30-37 are allowable at least as depending from allowable claim 29.

Claim 31 is believed to be allowable independently of allowable base claim 29 and intervening claim 30 as reciting a threat prediction function adapted to compare future weather information and the phase of flight and predict a threat as a function of the comparison, wherein the future weather information includes information describing both a predicted future intensity and a predicted future track of one or more weather cells. Claim 31 thus recites comparing an intensity of the weather condition with the phase of flight, similarly to allowable claim 7. Thus, although claim 31 differs in scope from allowable claim 7, the above arguments directed to claim 7 are sufficiently applicable to claim 31 as to make repetition unnecessary. Thus, for at least the reasons above, claim 31 is believed to be allowable independently of allowable base claim 29 and intervening claim 30.

Claim 32 is believed to be allowable independently of allowable base claim 29 and intervening claims 30 and 31 as reciting the threat prediction function being further adapted to predict the threat at coincidence with weather cells as a function of a predicted future intensity of the weather cells and an intended phase of flight at coincidence. Claim 32 thus recites generating a warning as a function of an "intended," i.e. future, or phase of flight, similarly to allowable claim 6. Thus, although claim 32 differs in scope from allowable claim 6, the above arguments directed to claim 6 are sufficiently applicable to claim 32 as to make repetition unnecessary. Thus, for at

least the reasons above, claim 32 is believed to be allowable independently of allowable base claim 29 and intervening claims 30 and 31.

Claim 35 is believed to be allowable independently of allowable base claim 29 and intervening claim 34 as reciting the weather radar processor is further adapted (1) to determine two or more gradations of threat, and (2) to generate said warning signal as a function of the two or more gradations of threat. Claim 35 thus recites generating a warning as a function of different levels of threat posed by both the phase of flight of the aircraft and the future weather information.

As discussed above in connection with claim 1, Kuntman fails to disclose or suggest generating a wind shear warning as a function of phase of flight of the aircraft. At least because Kuntman fails to disclose or suggest consideration of phase of flight, Kuntman cannot disclose or suggest determining gradations of threat as a function of phase of flight, as recited in claim 35. Thus, for at least the reasons above, claim 35 is believed to be allowable independently of allowable base claim 29 and intervening claim 34.

Newly Presented Claims:

Claim 38 is newly presented. Claim 38 is allowable at least as depending from allowable claim 29.

Claim 38 is believed to be allowable independently of allowable base claim 29 as reciting the threat prediction function being adapted to determine a severity of the threat to the safety of flight as a function of comparison of future weather information and phase of flight, similarly to allowable claim 35. Thus, although claim 38 differs in scope from allowable claim 35, the above arguments directed to claim 35 are sufficiently applicable to claim 38 as to make repetition unnecessary. Thus, for at least the reasons above, claim 38 is believed to be allowable independently of allowable base claim 29.

The claims now being in condition for allowance, reconsideration and allowance are respectfully requested.

If the Examiner has questions or wishes to discuss any aspect of the case, the Examiner is encouraged to contact the undersigned at the telephone number given below.

Respectfully submitted,

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